

Thermal Control Nano-Sat, Phase I

Completed Technology Project (2009 - 2009)



Project Introduction

Based on successful space testing onboard the Midstar1 satellite, Eclipse Electrochromics have been identified by a number of organizations as well as NASA as a high interest technology. For nanosats, the critical design challenge is achieving autonomous control of the EclipseVEDs

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for spacecraft thermal self regulation without the need for human intervention. To achieve this goal, Eclipse proposes in Phase I to employ EclipseVED

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technology and demonstrate automated control systems capable of in-flight thermal regulation of a cubesat or other small satellite. Phase I will include the construction of a single small satellite panel for in-house testing and principally work on the hardware and software required for autonomous regulation. In Phase II, Eclipse will build a complete multi-panel cubesat and work with Marshall Space Center to lab test a completely functional prototype.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★ Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
Eclipse Energy Systems, Inc.	Supporting Organization	Industry	St. Petersburg, Florida

Primary U.S. Work Locations

California	Florida
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Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX14 Thermal Management Systems
 - └ TX14.2 Thermal Control Components and Systems
 - └ TX14.2.7 Verification and Validation of Thermal Management Systems